

Natural Resources
Minerals, Policy and Planning

JULY 2006

Field Guide No. 2

Metallogeny of the Clarence Stream Gold Deposit, Southwestern New Brunswick. Thorne, K.G., Fyffe, L.R., McLeod, M. J., Lutes, G.G. and Lentz, D.R. (2006). 53 p.

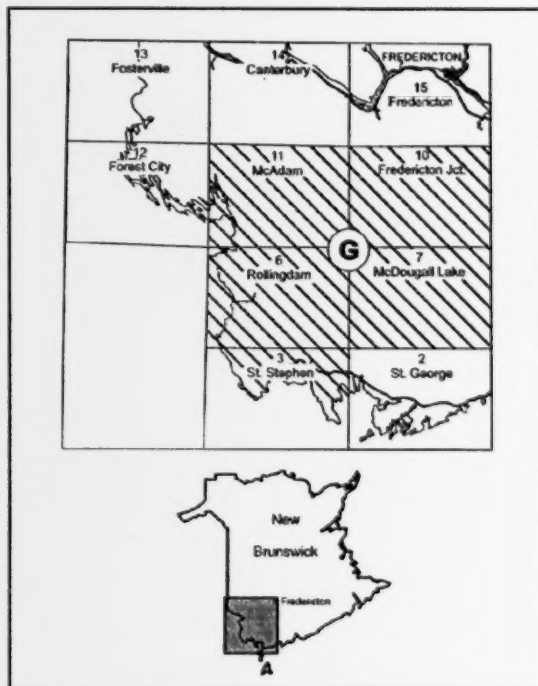
This field guide examines the geological setting of granite-related gold mineralization in the Clarence Stream area of southwestern New Brunswick. It reviews tectonic events affecting this segment of the New Brunswick Appalachians and relates the events to the genesis of gold at Clarence Stream.

Mineralization at the Main Zone, Clarence Stream deposit, is localized along a splay of the Sawyer Brook Fault that borders the northern contact of the Early Devonian Magaguadavic Granite. Gold occurs in a parallel series of northeast-trending, steeply dipping quartz veins hosted by sedimentary rocks of the Silurian Waweig Formation and gabbroic dykes of the East Branch Brook Gabbro. The Anomaly A Zone at Clarence Stream is situated north of the Sawyer Brook Fault in an area underlain by polydeformed quartzose sedimentary rocks of the Ordovician Kendall Mountain Formation. Kendall Mountain rocks host gold mineralization in quartz stockworks and veinlets localized within a shallowly dipping, folded thrust. Geophysical data suggest that a large granitic mass underlies the Anomaly A area at relatively shallow depths.

Mineralization features of the Main Zone and Anomaly A Zone show similarities to proximal and distal deposits of granite-related gold systems, respectively. Recognition of such gold systems in southwestern New Brunswick has significant implications for future mineral exploration in the Northern Appalachian Orogen.

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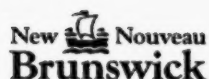
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**New Brunswick Map
showing the location of study area**

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